

Applicants : Brent J. Bos, Kenneth Schofield, Mark L. Larson and Niall R. Lynam
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Remarks:

The amendments and remarks presented herein are believed to be fully responsive to the Office Action dated September 25, 2007, the period for response being extended via the attached petition and fee for a two month extension of time.

Claims 103-124, 126-128 and 130-147 are pending in the application. Independent claim 127 and dependent claims 105, 116-123, 132, 133, 135, 136, 140 and 141 have been amended. The amendments are fully supported in the specification and drawings as originally filed. No new matter has been added.

CLAIM REJECTIONS UNDER 35 U.S.C. §103(a)

Claims 103-105, 107-120, 125, 126-128 and 134-147 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bechtel et al., U.S. Patent No. 5,451,822 ("Bechtel '822"), in view of Noack, U.S. Patent No. 4,355,271 ("Noack"), and in view of Stam et al., U.S. Patent No. 5,923,027 ("Stam et al."). Claim 106 was rejected under 35 U.S.C. §103(a) as being unpatentable over the Bechtel '822, Noack and Stam et al. combination, in further view of Bendicks et al., U.S. Patent No. 5,498,866. Claims 121-124 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Bechtel '822, Noack and Stam et al. combination, in further view of Shiraishi, U.S. Patent No. 4,881,019. Claim 130 was rejected under 35 U.S.C. §103(a) as being unpatentable over the Bechtel '822, Noack and Stam et al. combination, in further view of Kobayashi et al., U.S. Patent No. 5,426,294. Claim 131 was rejected under 35 U.S.C. §103(a) as being unpatentable over the Bechtel '822, Noack and Stam et al. combination, in further view of Kiyomoto et al., U.S. Patent No. 5,844,682. Claim 132 was rejected under 35 U.S.C. §103(a) as being unpatentable over the Bechtel '822, Noack and Stam et al. combination, in further view of Levers, U.S. Patent No. 5,276,389. Claim 133 was rejected under 35 U.S.C.

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§103(a) as being unpatentable over the Bechtel '822, Noack and Stam et al. combination, in further view of Teder, U.S. Patent No. 5,568,027.

Applicants respectfully traverse the rejections under §103(a). However, in order to expedite prosecution and allowance of the claims, and without acquiescing in the rejection in any way, Applicants have amended independent claim 127. This amendment is made without prejudice so that the subject matter of these claims may be pursued in a continuation application in the future.

Applicants have amended independent claim 127 to clarify that the interior rearview mirror system includes an image processor for processing image data captured by the imaging sensor, with the image processor applying a digital filtering process to account for irregularities of the window in the field of view of the imaging sensor. The rain sensor control is responsive to the processed image data, and the rain sensor control is operable to control at least one of a windshield wiper of the vehicle and a defogging system of the vehicle in response to the processed image data. The headlamp control is responsive to the processed image data, and the headlamp control is operable to control a headlamp of the vehicle in response to the processed image data.

Applicants submit that the combination of Bechtel '822, Noack and Stam et al. does not disclose or suggest or render obvious the interior rearview mirror system of the present invention, particularly as set forth in independent claim 127 and the claims depending therefrom. This is acknowledged by the Examiner in the Office Action. As stated in the Office Action, Bechtel in view of Noack and Stam fails to disclose that the control is operable to apply a filtering or smoothing algorithm to the output signal to reduce the effects of scratches on the window of the vehicle (see Office Action, page 11 with respect to the rejection of claim 133). The Office Action cites to Teder for support of the rejection of claim 133. Applicants respectfully traverse.

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Teder does not disclose or suggest or render obvious such a filtering process or algorithm, and Teder clearly does not disclose or suggest or render obvious an image processor for processing image data captured by an imaging sensor, with the image processor applying a digital filtering process to account for irregularities of the window in the field of view of the imaging sensor. To the contrary, Teder discloses an optical sensor and a smoothing algorithm that "includes a logarithmic conversion feature for converting a recent rain flux value to a recent rain intensity value," and "includes a means for forming a weighted average of medium term rain intensity and long term rain intensity using a multiple time constant averaging approach, the result being that excessively rapid responses of the wiper actuations to changing conditions is minimized." Column 3, line 63 to column 4, line 5 of Teder. The algorithm of Teder thus smoothes the rain drop data indicative of the rain drops at the vehicle windshield to average the rain drop data over a period of time.

There is no disclosure or suggestion in Teder of an imaging sensor or an image processor for processing image data captured by an imaging sensor, with the image processor applying a digital filtering process to account for irregularities of the window in the field of view of the imaging sensor, as set forth in independent claim 127. Nor would it be obvious to one of ordinary skill in the art to apply the teachings of the optical sensor algorithm to the system of Bechtel, Noack and Stam, since Teder teaches the use of an optical sensor that produces either positive or negative signal excursions as a result of an impinging raindrop (see column 5, lines 23-27 of Teder), and thus teaches away from use of an image sensor. Moreover, Teder teaches away from an image processor that uses a digital filtering process to account for irregularities, such as, for example, scratches or pits at the windshield and in the field of view of the imaging sensor, by teaching that raindrop data is averaged over time to eliminate momentary variations in the rain flux value so that excessively rapid responses of wiper actuations to changing conditions is minimized. Thus, it would not be obvious to one of ordinary skill in the art to modify the teachings of Bechtel, Noack and Stam with the teachings of Teder, and even if such a combination of teachings were made, it would not result in the presently claimed invention.

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Accordingly, Applicants submit that the combination of Bechtel '822, Noack and Stam et al., either by itself or in further combination with Teder or any other prior art of record, does not disclose or suggest or render obvious the interior rearview mirror system of the present invention, particularly as set forth in independent claim 127 and the claims depending therefrom. Reconsideration and withdrawal of the rejection of claims 103-124, 126-128 and 130-147 is respectfully requested.

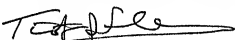
Claims 103-124, 126-128 and 130-147 are pending in the application. Applicants respectfully submit that claims 103-124, 126-128 and 130-147 are in condition for allowance and a notice to that effect is earnestly and respectfully requested.

Respectfully submitted,

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By: Van Dyke, Gardner, Linn & Burkhart, LLP

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